# CLASSIFICATION AND IDENTIFICATION OF SEDIMENTARY ROCKS

| TEXTURE CONSTITUENTS TYPE | TEXTURAL FEATURES | COMPOSITION AND DIAGNOSTIC FEATURES | ROCK NAME |
|---|---|---|---|
| **INORGANIC CLASTIC (DETRITAL)** | Pebbles (> 2mm) imbedded in a matrix of sand | Angular rock/mineral pebbles | BRECCIA |
| | Pebbles (> 2mm) imbedded in a matrix of sand | Rounded rock/mineral pebbles | CONGLOMERATE |
| | Sand-sized grains (1/16-2mm) | Primarily feldspar | ARKOSE SANDSTONE |
| | Sand-sized grains (1/16-2mm) | Primarily quartz | QUARTZ SANDSTONE |
| | Sand-sized grains (1/16-2mm) | Mixed grains with clay, "Dirty Sandstone" | GRAYWACKE SANDSTONE |
| | Silt-sized grains (1/256-1/16mm) | Particles too small to be seen clearly, but feels "gritty" | SILTSTONE |
| | Clay-sized grains (<1/256 mm) | Fine clay minerals, with distinctive layers | SHALE |
| **INORGANIC CHEMICAL PRECIPITATES (NON-CLASTIC)** | Medium to coarse crystals | $CaCO_3$ effervesces, distinct crystals | CRYSTALLINE LIMESTONE |
| | Dense crystals in banded layers | $CaCO_3$ effervesces, distinct layers | TRAVERTINE |
| | Variety of crystal sizes | $CaCO_3$ effervesces, many colors, may have fossils | LIMESTONE |
| | Porous/spongy | $CaCO_3$ effervesces, low density, deposits from springs | TUFA |
| | Dense, crystals too fine to see (cryptocrystalline) | $SiO_2$, very hard, multiple colors (includes Jasper, Flint, Agate) | CHERT |

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| **BIOCLASTIC (ORGANIC DETRITAL)** | Very fine grained, earthy | Microscopic $CaCO_3$ protozoa shells, generally fairly soft | CHALK |
| | Calcite mud with abundant fossils | $CaCO_3$ effervesces, fossils predominate | FOSSILIFEROUS LIMESTONE |
| | Coarse fossil hash | Aggregate of shell fragments | COQUINA |
| | Very fine grained, earthy | Microscopic SiO2 diatom cases, generally fairly soft | DIATOMITE |
| | Fibrous, spongy, carbonaceous | Compacted plant material, recognizable plant pieces, soft, light to dark brown | PEAT |
| | Dense, carbonaceous | Compacted plant material, more dense than peat, brown to black | LIGNITE |
| | Dense, carbonaceous | Lithified plant remains, denser than lignite, smudges hands, black | BITUMINOUS COAL |